

# TW™-Series Septic Tanks

## General Installation Instructions



### Before You Begin

Infiltrator Systems' TW-Series Septic Tanks must be installed according to state and/or local regulations, which supersede the manufacturer's installation instructions. If unsure of the installation requirements for a particular site, contact the local health department or permitting authority.

Visually inspect the tank for handling- and transportation-related damage prior to installation.

Installation instruction illustrations depict tank models TW-900™ through TW-1500™. The same installation instructions apply to the TW-375™ pump tank.

#### Materials and Equipment Needed

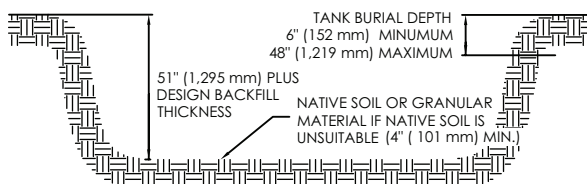
- |   |   |
|---|---|
| <input type="checkbox"/> TW-Series Septic Tank      | <input type="checkbox"/> Excavator  |
| <input type="checkbox"/> Manhole lids (included)    | <input type="checkbox"/> Shovel   |
| <input type="checkbox"/> 6 Bolts per lid (included) | <input type="checkbox"/> Level  |
| <input type="checkbox"/> Rubber gaskets (included)  | <input type="checkbox"/> 5" (127 mm) or 5 1/4" (133 mm) diameter hole saw |
| <input type="checkbox"/> Tape measure               | <input type="checkbox"/> Utility knife                                    |
| <input type="checkbox"/> Pipe, tees, and risers     | <input type="checkbox"/> Pipe glue  |
| <input type="checkbox"/> Socket wrench              |   |

### Installation Site Selection

1. Avoid installation of the tank in vehicular traffic areas. The tank is designed for non-traffic applications.
2. The maximum vehicle load is a 4,500-pound axle load at a soil cover depth of 6 to 48 inches (152 to 1,219 mm) of soil.

### Excavating and Preparing the Site

1. The excavation width and length should be 12 to 18 inches (304 to 457 mm) larger than the tank on each side.
2. Excavate to account for 51 inch (1,295 mm) height of tank, 4 inches (101 mm) of bedding (if required), and backfill thickness (permissible cover depth is 0.5 to 4 feet (152 to 1,219 mm) of soil).
3. Clear the soil surface of any debris and large rocks to ensure that the bottom of the tank is uniformly supported at the base of the excavation. Create a uniform, level surface.
4. Verify the bottom of the excavation is a level plane, in order to avoid differential settlement of the tank, once backfilled.
5. Visually inspect the bottom of the excavation to verify the suitability of the native soil for tank installation. Large, protruding, or sharp stones or other similar objects that have the potential to damage the tank should not be allowed to contact the bottom exterior surface of the tank.

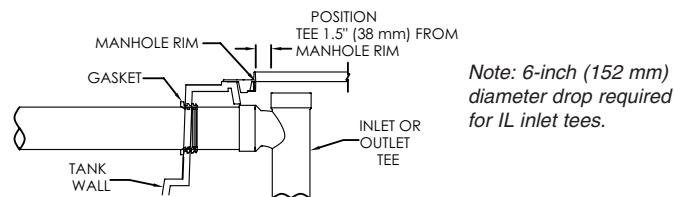


### Bedding the Tank

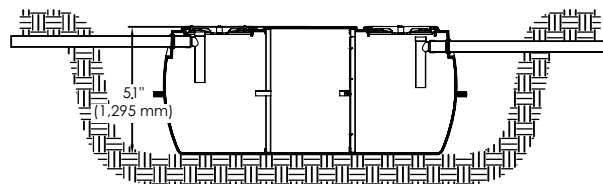
The tank should be installed in suitable native soil or a minimum 4-inch (101 mm) layer of pea stone, sand, gravel, or other granular material if native material is unsuitable.

### Installing the Tank

1. If the tank inlet and outlet penetrations are not drilled, drill the inlet and outlet penetrations in the tank (see reverse side for drill height information) using the following saw sizes:
  - a. SDR 35 pipe - 5-inch (127 mm) hole saw
  - b. Schedule 40 pipe - 5 1/4-inch (133 mm) hole saw
2. Install the rubber gaskets (included) at the inlet and outlet penetrations.
3. Slide the tees through the gaskets.
4. Horizontally position the lid as shown in the detail below.



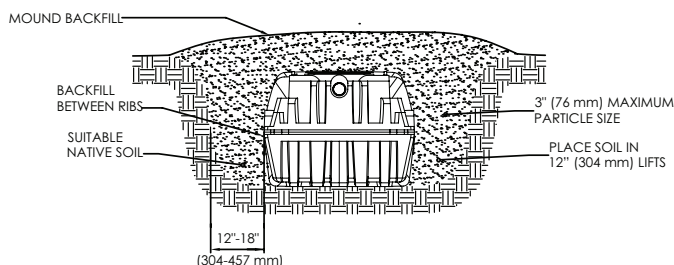
5. Using the lifting lugs, lower the tank into the excavation with tees in place.
6. Install inlet and outlet piping and risers as necessary. See "Inlet and Outlet Hole Location" section for drilling information.



### Backfilling the Tank

*Note: The Infiltrator TW-Series Tanks do not require filling with water prior to backfill placement.*

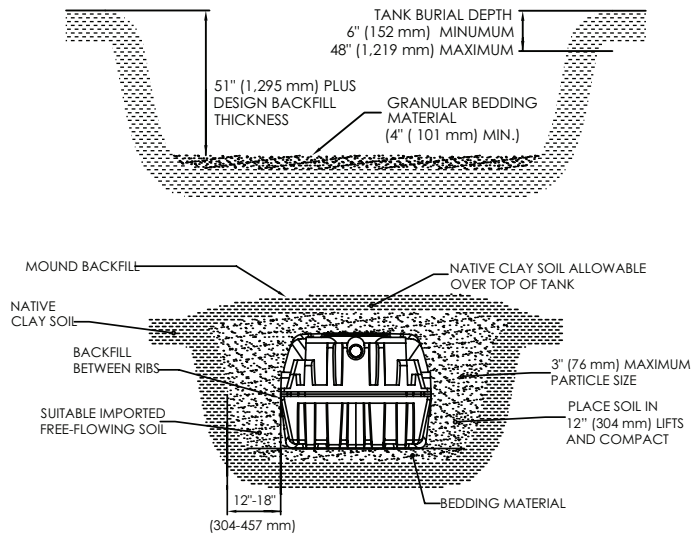
1. Install the lid using the bolts provided prior to backfilling.
2. Do not allow stones greater than 3 inches (76 mm) in diameter in the backfill material.
3. Do not place backfill on top of the tank before the sidewalls are completely backfilled.
4. Place backfill around the four sidewalls in a progressive, alternating manner, so that the backfill height along the four sidewalls is maintained within a 12-inch (304 mm) tolerance.
5. Continue to place backfill along the sidewalls in 12-inch (304 mm) lifts. Place backfill between the ribs on the sidewalls such that the space between the ribs is completely filled with soil.
6. Compact backfill material either by hand tamping or using a mechanical compactor. Be sure to compact each lift prior to placement of the next lift. Compact backfill from the tank sidewalls to the excavation sidewalls.
7. Complete backfilling and grade the area.



# Supplemental Installation Procedures

## Installing in Clay Soil

- 1) Do not bed or backfill the tank using clay soil.
- 2) Bed and backfill the tank with free-flowing soil obtained from a source other than the native soil.
- 3) Place and compact imported, free-flowing backfill as instructed under "Backfilling the Tank" in the General Installation Instructions section.
- 4) A minimum cover of 6 inches (152 mm) of imported, free-flowing material must be placed over the top of the tank. Native clay soil may be placed above the imported material to finish grade elevation.



## Installing Under Shallow Groundwater Conditions

If the seasonal high groundwater table elevation has the potential to rise 18 inches (457 mm) or more above the bottom elevation of the tank, anti-buoyancy measures are warranted. Methods for addressing this condition are addressed below.

1. Option 1 - Physically Secure Tank
  - a) Secure the tank with a commercially available or field-constructed anchoring system.
  - b) The anchoring system may consist of a strap system in conjunction with anchors, a ballast connected to the tank, or other suitable means.
  - c) For a strap system, the product used must not have the potential to cut into the polyethylene tank wall. Protective padding may be required for steel cable strap systems. Nylon, polyester, and polypropylene straps are acceptable.
  - d) A ballast shall be constructed using reinforced, cast-in-place concrete. The ballast shall be cast around the tanks in such a fashion as to provide sufficient downward force to prevent the tank from being displaced upward under anticipated groundwater conditions.

2. Option 2 - Long-Term Groundwater Control
  - a) If site conditions are amenable to construction of a groundwater control system, this can be used in shallow groundwater conditions. Possible solutions include:
    - i) Underdrain – Bed and backfill the tank with clean pea gravel or equivalent pervious material. Install piping in the bedding to convey collected groundwater by gravity flow to a downgradient location away from the tank and drainfield.
    - ii) Interceptor trench - Construct an interceptor trench upgradient of the tank to continuously maintain a groundwater table that is no higher than 18 inches (457 mm) above the bottom of the tank. Install piping within the trench to convey collected groundwater to a downgradient location away from the tank and drainfield.
  - b) Groundwater control is not applicable if prohibited by regulation or law, or the tank installation location is potentially subject to surface water inundation due to flooding.
3. Short-Term Groundwater Control
  - a) During tank installation, construction of a temporary dewatering well may be necessary to maintain dry conditions.
  - b) Expand a portion of the excavation horizontally and vertically to create an area for groundwater flow and collection.
  - c) Pump collected groundwater out of the dewatering well to maintain dry conditions within the excavation.
4. Fill the tank to the anticipated high groundwater table height immediately after installation where shallow groundwater table conditions exist.
5. Contact Infiltrator Systems' Technical Services Department for assistance with shallow groundwater condition design and installation methods at 800-221-4436.

## Installing the Riser

1. Compatible risers include 24-inch (609 mm) diameter products from Polylok®, Inc., Tuf-Tite® Corporation, EZ SET, and IPEX (Ultra Rib), in addition to 24-inch (609 mm) diameter corrugated pipe.
2. Install riser assemblies on a TW-Series Tank in accordance with the riser manufacturer's installation instructions.

## Miscellaneous Specifications

- Failure to comply with the installation instructions may void the warranty.
- Prior to ground disturbance for tank installation, check for subsurface obstructions and utilities in conformance with applicable rules and regulations.
- Tanks are only designed for installation underground.
- Operating water temperature shall be less than 140° F.
- Tanks are not fire resistant. Store away from ignition sources.
- Tanks are not suitable for potable water storage applications.
- Tanks are recommended for use as septic, rainwater/stormwater storage, and pump tanks only.

**Table 1: TW-Series Polyethylene Tank Nominal Volume Chart**

Height' (in)	Total Liquid Volume in Tank at Indicated Height									
	TW-375		TW-900		TW-1050		TW-1250		TW-1500	
	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters
0	0	0	0	0	0	0	0	0	0	0
1	3	12	10	37	11	43	14	52	17	64
2	8	31	22	82	25	94	30	114	37	140
3	15	57	41	156	48	180	57	218	70	266
4	22	85	62	236	72	273	87	329	106	403
5	30	115	84	317	97	367	117	442	143	541
6	39	146	106	400	122	462	147	557	180	682
7	47	179	128	483	147	558	178	672	217	823
8	56	213	150	567	173	656	208	789	255	966
9	66	248	172	653	199	754	240	907	293	1,109
10	75	284	195	739	225	853	271	1,026	331	1,254
11	85	320	218	826	252	954	303	1,146	370	1,401
12	94	357	242	915	279	1,055	335	1,267	409	1,548
13	104	395	265	1,004	306	1,157	367	1,389	448	1,696
14	114	433	289	1,093	333	1,260	399	1,512	488	1,845
15	125	472	313	1,184	360	1,364	432	1,636	527	1,996
16	135	510	337	1,276	388	1,469	465	1,761	567	2,148
17	145	550	361	1,368	416	1,575	498	1,887	608	2,300
18	157	593	386	1,461	444	1,682	532	2,014	648	2,454
19	168	637	411	1,555	473	1,789	566	2,141	689	2,608
20	180	681	436	1,650	501	1,897	600	2,270	730	2,764
21	191	724	462	1,747	530	2,008	634	2,401	772	2,922
22	203	768	488	1,847	560	2,121	670	2,535	815	3,085
23	214	812	515	1,948	591	2,237	706	2,672	858	3,249
24	225	852	542	2,053	622	2,356	743	2,812	903	3,418
25	235	891	569	2,154	653	2,471	779	2,948	946	3,582
26	246	930	595	2,251	682	2,582	813	3,079	988	3,740
27	256	968	620	2,346	711	2,690	847	3,207	1,029	3,895
28	266	1,006	644	2,439	739	2,797	881	3,334	1,070	4,049
29	276	1,044	669	2,533	767	2,904	914	3,460	1,110	4,202
30	285	1,080	693	2,625	795	3,009	947	3,586	1,150	4,354
31	295	1,116	718	2,717	823	3,114	980	3,710	1,190	4,505
32	304	1,152	741	2,807	850	3,217	1,013	3,833	1,229	4,654
33	313	1,186	765	2,895	877	3,319	1,045	3,954	1,268	4,801
34	322	1,219	788	2,983	903	3,420	1,076	4,074	1,307	4,947
35	331	1,252	811	3,070	930	3,519	1,108	4,193	1,345	5,091
36	339	1,283	834	3,155	956	3,617	1,139	4,310	1,382	5,233
37	347	1,313	856	3,240	981	3,714	1,169	4,426	1,420	5,374
38	355	1,342	877	3,320	1,006	3,807	1,199	4,537	1,456	5,510
39	362	1,370	898	3,398	1,029	3,897	1,227	4,646	1,491	5,643
40	369	1,396	920	3,482	1,055	3,994	1,257	4,759	1,528	5,783
41	375	1,421	938	3,549	1,076	4,072	1,283	4,857	1,559	5,903
42	382	1,445	957	3,623	1,098	4,158	1,310	4,960	1,593	6,030
43	388	1,467	976	3,695	1,120	4,241	1,337	5,062	1,626	6,155
44	393	1,488	994	3,765	1,142	4,323	1,363	5,160	1,658	6,276
45	398	1,507	1,011	3,829	1,162	4,397	1,387	5,250	1,687	6,386
46	403	1,525	1,025	3,878	1,177	4,456	1,406	5,324	1,711	6,479
47	408	1,543	1,036	3,923	1,191	4,509	1,424	5,389	1,733	6,561
48	412	1,560	1,045	3,954	1,201	4,544	1,435	5,432	1,747	6,612
49	415	1,573	1,060	4,011	1,217	4,606	1,452	5,496	1,766	6,684

*Note: Height measured from inside surface at bottom of corrugation in tank.*

## Inlet and Outlet Hole Locations

Drill height markings are provided on the Infiltrator TW-900, TW-1050, TW-1250, and TW-1500 to serve as a guide for inlet and outlet hole locations. Markings "A" (lower) and "B" (upper) are located at the inlet end. *Note: holes may be drilled at the end or side inlet and outlet locations.* Markings "C" (lower), "D" (middle), and "E" (upper) (TW-900 only) are located at the outlet end. The centering symbol (resembling a dimple) next to the letter indicates the centerpoint location for the hole saw. The pilot drill bit on the hole saw should be positioned on the centering symbol to properly align the hole saw.

The drill height markings below are provided to set the inlet and outlet invert heights based on state and/or local regulations. The chart below provides the proper inlet and outlet drill points. Note that state, provincial and local regulatory requirements take precedence over the information provided in the table below.

State or Province	Inlet Drill Location	Outlet Drill Location	Invert Drop (in) [mm]	Inlet Invert Height <sup>2</sup> (in) [mm]	Outlet Invert Height <sup>2</sup> and Liquid Level (in) [mm]
DE, FL <sup>1</sup> , IA, ON	A	D	2 [50 mm]	42 [1,066 mm]	40 [1,016 mm]
AR <sup>2</sup> , CA, CO, ID, IN <sup>1</sup> , KS, KY, MO, MT, ND, PA, SD, TX, VT, WV	B	C	3 [76 mm]	42.75 [1,085 mm]	39.75 [1,009 mm]
All Others	A	C	2.25 [57 mm]	42 [1,066 mm]	39.75 [1,009 mm]

### Notes:

1. Florida, Indiana, and Oregon tanks are factory drilled.
2. Arkansas tanks must be drilled by the distributor.
3. Invert heights are measured from the interior surface at the bottom of the tank.

## INFILTRATOR SYSTEMS, INC. ("Infiltrator") INFILTRATOR® TW™-SEPTIC TANK LIMITED WARRANTY

### FIVE (5) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an Infiltrator TW™ Septic Tank. A Septic Tank manufactured by Infiltrator, when installed and operated in accordance with Infiltrator's installation instructions and local regulation by a licensed installer, is warranted to you: (i) against defective materials and workmanship for five (5) years after installation. Infiltrator will, at its option, (i) repair the defective product or (ii) replace the defective materials. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Septic Tank.

(b) In order to exercise its warranty rights, you must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect.

(c) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. INFILTRATOR SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(d) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY INFILTRATOR AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. INFILTRATOR DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR OR REPLACE.

(e) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

(f) NO REPRESENTATIVE OF INFILTRATOR HAS THE AUTHORITY TO CHANGE THIS LIMITED WARRANTY IN ANY MANNER WHATSOEVER, OR TO EXTEND THIS LIMITED WARRANTY.

### CONDITIONS AND EXCLUSIONS

There are certain conditions or applications over which Infiltrator has no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator and are NOT covered under this warranty. They include failure to install the Septic Tank in accordance with instructions or applicable regulatory requirements or guidance, altering the Septic Tank contrary to the installation instructions and disposing of chemicals or other materials contrary to normal septic tank usage.

The above represents the Standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of a Septic Tank should contact Infiltrator's corporate headquarters in Old Saybrook, Connecticut, prior to such purchase to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of a Septic Tank.



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